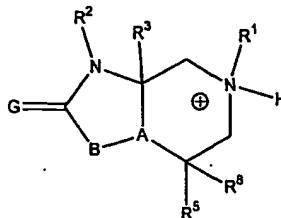


CLAIMS

1. A compound of the formula:

5



or a pharmaceutically acceptable salt thereof, wherein:

A is CH or nitrogen;

10 B is $-\text{CH}_2-$, $-\text{CHF}-$, $-\text{CF}_2-$, NR_4 or O, with the proviso that when A is N, B is $-\text{CH}_2-$, $-\text{CHF}-$ or $-\text{CF}_2-$;

G is oxygen or $=\text{N-CN}$,

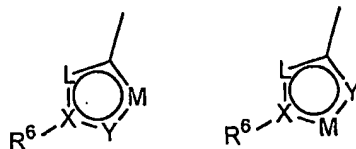
R₁ is hydrogen or C₁₋₆ alkyl;

15 R₂ is hydrogen; C₁₋₁₀ alkyl optionally substituted with C₁₋₆ alkoxy or halogen; aralkyl, a $-\text{CH}_2$ -heterocycle or a $-\text{CH}_2$ -C₅ cycloalkyl ring each of which may be optionally substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₈ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl
20 or C₂₋₆ haloalkynyl;

R₃ is hydrogen; a cyclic alkyl radical containing from 3-6 carbon atoms or a C₁₋₆ alkyl;

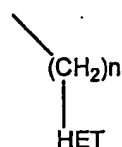
R₄ is hydrogen or lower alkyl;

25 R₅ is a 5-membered unsaturated heterocyclic ring having one of the following structures:



30 where L and M are independently O or N (or NH where the circumstances require) with the proviso that both of L

and M cannot be O; Y is S, CH, O or N (or NH where the circumstances require); X is C or N; and
 R₆ is lower alkyl; hydrogen; arylamino optionally substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, /C₁₋₆ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl or C₂₋₆ haloalkynyl; aralkyl optionally substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl or C₂₋₆ haloalkynyl; or a group of formula:



wherein n is an integer in the range from 1 to 4 and
 HET is a heterocyclic group optionally substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl or C₂₋₆ haloalkynyl;

or R₅ may also be C₂₋₄-aralkyl, -CH₂-O-R₇ where R₇ is C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₂₋₄ aralkyl which groups may be optionally substituted with fluoro or hydroxy; and

R₈ is hydrogen or aryl (optionally substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₆ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl or C₂₋₆ haloalkynyl);

with the proviso that when either R₃ or R₈ is not hydrogen, the other is hydrogen.

2. A compound according to claim 1, in which

G is O;

R₁ is H or lower alkyl;

R₂ is C₁₋₈ alkyl, -CH₂-aryl or a -CH₂-substituted heterocycle each of which may be optionally

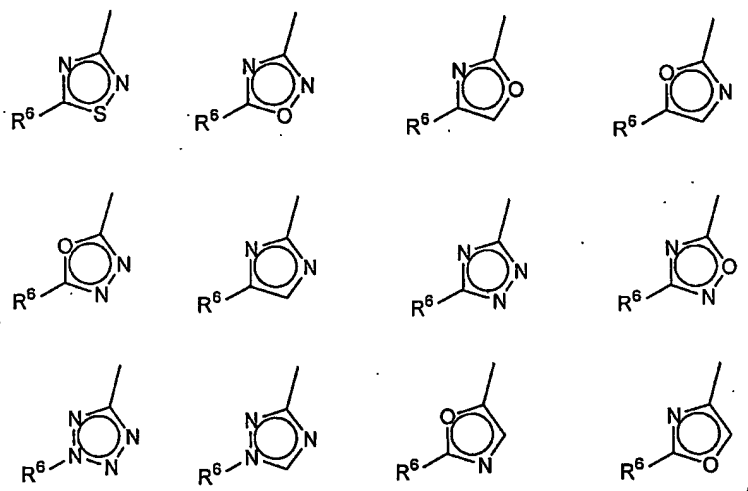
substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₈ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl or C₂₋₆ haloalkynyl;

5 \rightarrow R₃ is hydrogen, cyclobutyl, cyclopropyl, methyl, ethyl, isopropyl, butyl, sec-butyl;

R₄ is hydrogen;

R₅ is one of the following 5-membered unsaturated heterocyclic ring structures:

10



15 R₆ is methyl, aralkyl, arylamino, aralkyl substituted by one or more halo and having a methylene group linking the aryl to the unsaturated 5-membered ring, aralkyl substituted by one or more halo and having an ethylene group linking the aryl to the unsaturated 5-membered ring;

R₈ is hydrogen, phenyl or halo-substituted phenyl.

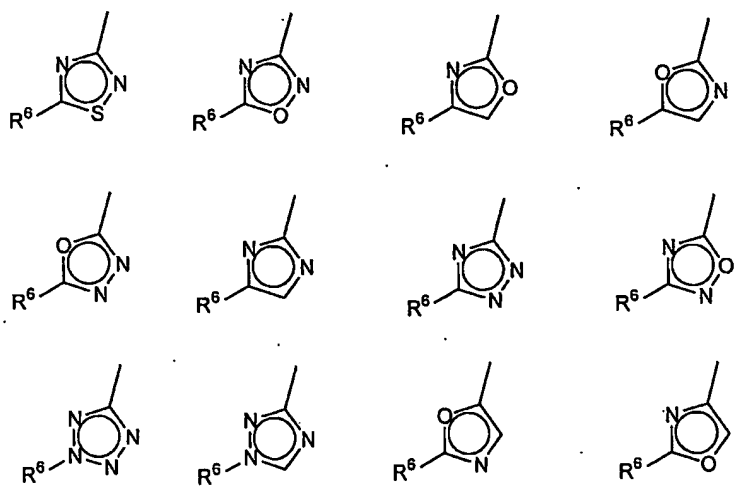
20 3. A compound according to claim 2, wherein

R₁ is H;

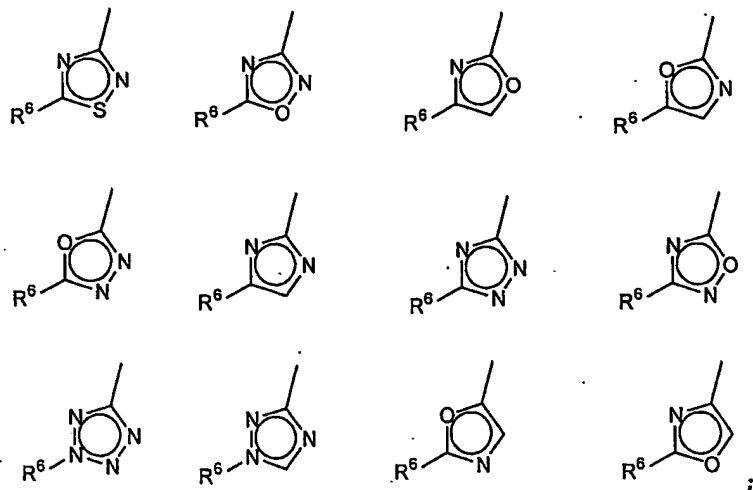
R₂ is -CH₂-aryl optionally substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₈ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl or C₂₋₆ haloalkynyl;

25 R₃ is hydrogen or cyclobutyl;

R₅ is one of the following 5-membered unsaturated heterocyclic ring structures:



- 5 R₆ is phenyl, phenylamino substituted by one or more halo, phenylmethyl substituted by one or more halo, or phenethyl substituted by one or more halo;
 R₈ is hydrogen or a fluoro-substituted phenyl.
4. A compound according to claim 3, wherein
- 10 R₂ is -CH₂-C₆H₅ or -CH₂-heterocyclic aryl each of which may be optionally substituted with one or more of halo, hydroxy, C₁₋₆ alkyl, C₁₋₆ haloalkyl, C₁₋₈ alkoxy, C₁₋₆ haloalkoxy, C₂₋₆ alkenyl, C₂₋₆ haloalkenyl, C₂₋₆ alkynyl or C₂₋₆ haloalkynyl;
- 15 R₃ is H;
- R₅ is one of the following 5-membered unsaturated heterocyclic ring structures:



R_6 is a meta chloro-substituted phenylamino, a meta chloro-substituted phenylmethyl or a meta chloro-substituted phenethyl;

5 R_8 is 3,5-difluorophenyl.

5. A compound according to claim 1, wherein

A is CH;

B is $-\text{CH}_2-$;

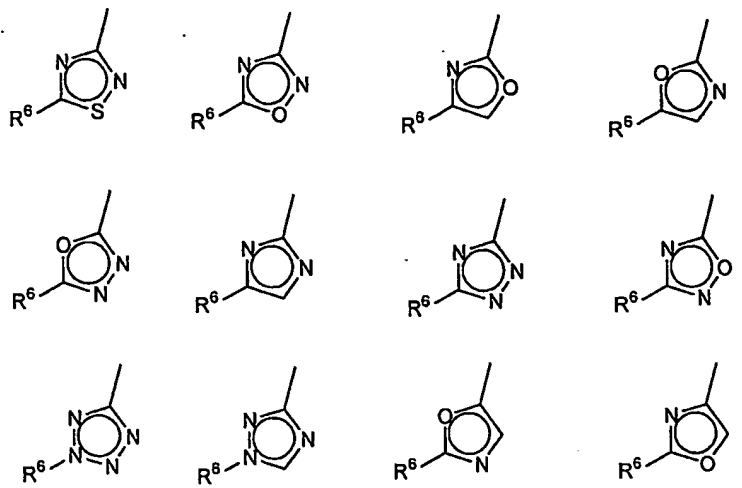
G is oxygen;

10 R_1 is hydrogen;

R_2 is C_{1-10} alkyl or $-\text{CH}_2$ -aryl (optionally substituted by one or more of halo, hydroxy, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-8} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} haloalkenyl, C_{2-6} alkynyl or C_{2-6} haloalkynyl);

15 R_3 is cyclobutyl or H;

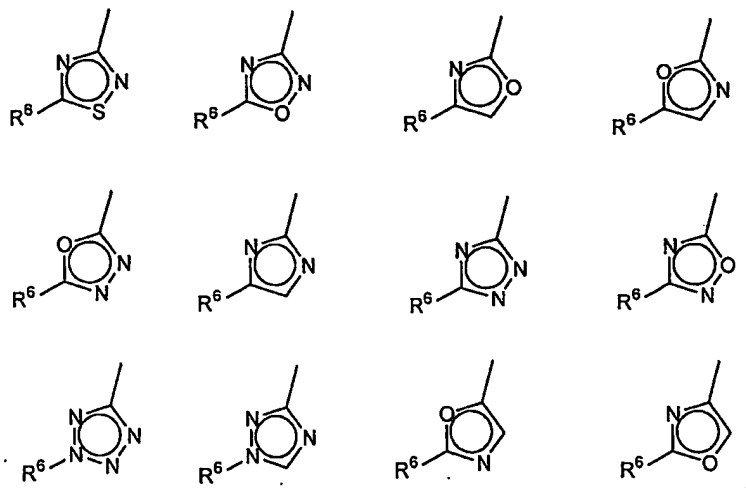
R_5 is one of the following 5-membered unsaturated heterocyclic ring structures:



R_6 is methyl, aralkyl, arylamino, aralkyl substituted by one or more halo and having a methylene group linking the aryl to the unsaturated 5-membered ring, aralkyl substituted by one or more halo and having an ethylene group linking the aryl to the unsaturated 5-membered ring; and

R_8 is H or phenyl (optionally substituted with halo).

- 10 6. A compound according to claim 1, in which A is CH;
 B is O;
 G is oxygen;
 R_1 is hydrogen;
 R_2 is C_{1-10} alkyl, $-CH_2$ -aryl (optionally substituted
 15 by one or more of halo, hydroxy, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-8} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} haloalkenyl, C_{2-6} alkynyl or C_{2-6} haloalkynyl);
 R_3 is cyclobutyl or H;
 R_5 is $-CH_2-O-CH_3$, $-CH_2-O-CH_2-CH_2-C_6H_5$ or one of the
 20 following 5-membered unsaturated heterocyclic ring structures:



R_6 is methyl, aralkyl, arylamino, aralkyl substituted by one or more halo and having a methylene group linking the aryl to the unsaturated 5-membered ring, aralkyl substituted by one or more halo and having an ethylene group linking the aryl to the unsaturated 5-membered ring; and

R_8 is H or phenyl (optionally substituted with halo).

10 7. A compound according to claim 1, wherein

A is CH;

B is NH;

G is oxygen;

R_1 is hydrogen;

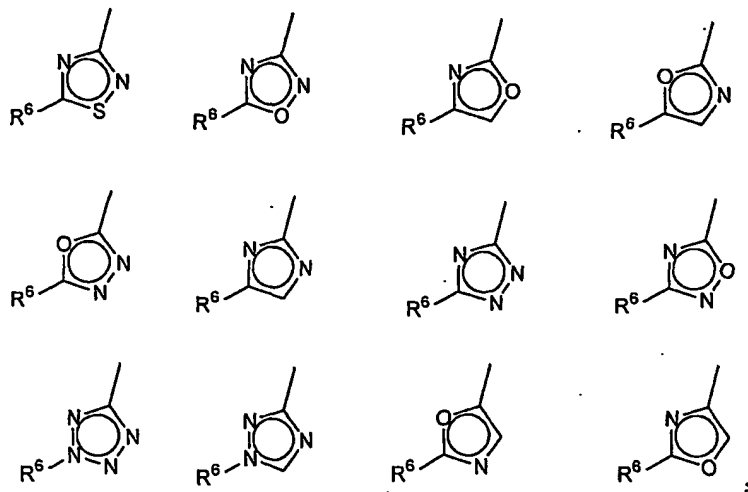
15 R_2 is C_{1-10} alkyl, $-CH_2$ -aryl, a $-CH_2$ -heterocyclic group or a $-CH_2$ -substituted C_5 cycloalkyl (optionally substituted by one or more of halo, hydroxy, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-8} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} haloalkenyl, C_{2-6} alkynyl or C_{2-6} haloalkynyl);

R_3 is cyclobutyl or H;

R_4 is hydrogen;

R_5 is $-CH_2-O-CH_3$, $-CH_2-O-CH_2-CH_2-C_6H_5$ or one of the following 5-membered unsaturated heterocyclic ring structures:

25



R_6 is methyl, aralkyl, arylamino, aralkyl substituted by one or more halo and having a methylene group linking the aryl to the unsaturated 5-membered ring, aralkyl substituted by one or more halo and having an ethylene group linking the aryl to the unsaturated 5-membered ring; and

R_8 is H or phenyl (optionally substituted with halo).

10 8. A compound according to claim 1, wherein

A is N;

B is $-\text{CH}_2-$;

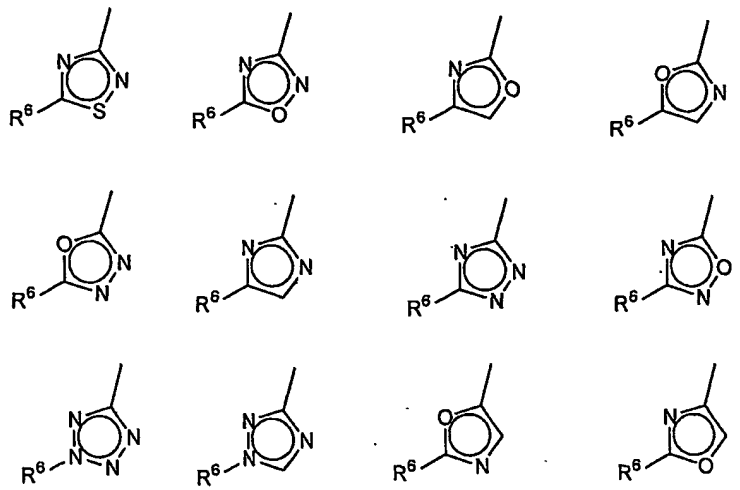
G is oxygen;

R_1 is hydrogen;

15 R_2 is C_{1-10} alkyl, $-\text{CH}_2$ -aryl, a $-\text{CH}_2$ -heterocyclic group or a $-\text{CH}_2$ -substituted C_5 cycloalkyl (optionally substituted one or more of halo, hydroxy, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-8} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} haloalkenyl, C_{2-6} alkynyl or C_{2-6} haloalkynyl);

R_3 is cyclobutyl or H;

R_5 is one of the following 5-membered unsaturated heterocyclic ring structures:



R_6 is methyl, aralkyl, arylamino, aralkyl substituted by one or more halo and having a methylene group linking the aryl to the unsaturated 5-membered ring, aralkyl substituted by one or more halo and having an ethylene group linking the aryl to the unsaturated 5-membered ring; and

R_8 is H or phenyl (optionally substituted with halo).

10 9. A compound according to claim 1, wherein

A is N;

B is $-\text{CH}_2-$;

G is oxygen;

R_1 is hydrogen;

15 R_2 is C_{1-10} alkyl, $-\text{CH}_2$ -aryl, a $-\text{CH}_2$ -heterocyclic group or a $-\text{CH}_2$ -substituted C_5 cycloalkyl, (optionally substituted by one or more of halo, hydroxy, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-8} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} haloalkenyl, C_{2-6} alkynyl or C_{2-6} haloalkynyl);

R_3 is cyclobutyl or H;

R_5 is $-\text{CH}_2\text{-O-CH}_3$; and

R_8 is H or phenyl (optionally substituted with halo).

25 10. A compound according to claim 1, wherein

A is N;

B is $-\text{CH}_2-$;

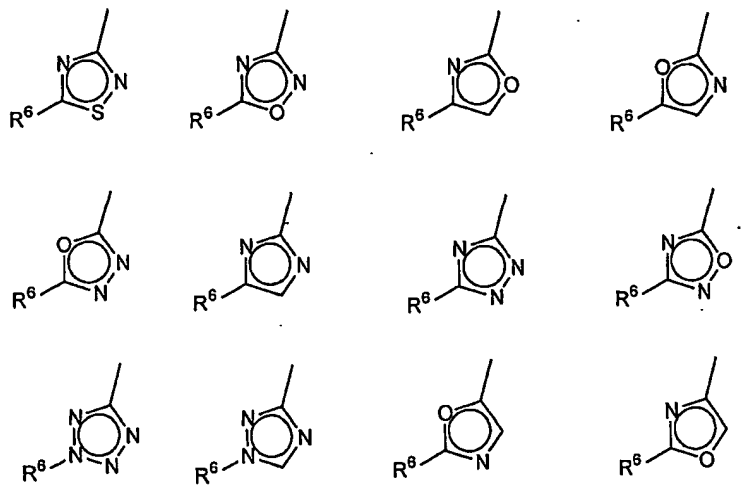
G is oxygen;

R_1 is hydrogen;

R_2 is C_{1-10} alkyl, $-\text{CH}_2$ -aryl or a $-\text{CH}_2$ -heterocyclic group, (optionally substituted by one or more of halo, hydroxy, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} haloalkenyl, C_{2-6} alkynyl or C_{2-6} haloalkynyl);

R_3 is hydrogen or cyclobutyl;

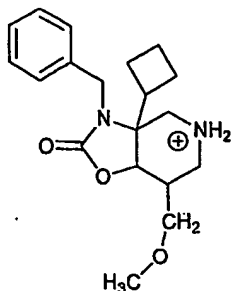
R_5 is one of the following 5-membered unsaturated heterocyclic ring structures:



R_6 is methyl, aralkyl, arylamino, aralkyl substituted by one or more halo and having a methylene group linking the aryl to the unsaturated 5-membered ring, aralkyl substituted by one or more halo and having an ethylene group linking the aryl to the unsaturated 5-membered ring; and

R_8 is phenyl, 3,5-difluorophenyl or H.

11. A compound according to claim 1, having the formula:



12. A pharmaceutical composition comprising a
5 therapeutically effective amount of the compound of
claims 1 to 11.
13. A compound in accordance with any one of claims 1
to 11 for use as a medicament.
14. Use of a compound in accordance with claims 1-11
10 in the manufacture of a medicament for the treatment of
disorders caused by the malfunction of the
acetylcholine or muscarinic systems.
15. The use of claim 14, wherein the disorder is
Alzheimer's disease.
- 15 16. A method of treatment, prophylaxis and/or
inhibition of disorders caused by the malfunction of
the acetylcholine or muscarinic systems comprising the
administration of a therapeutically effective amount of
a compound as claimed in any of claims 1 to 11 to a
20 subject in need thereof.